

## Fixed and Variable Costs

### STUDY POINTS

1 **FIXED COSTS** are costs which do not change however many miles a year Joyce travels. Fixed costs are the same whether she travels 1 mile or 30 000 miles a year. Which of the costs shown in the picture are fixed costs? (Assume that depreciation, servicing and repairs are a fixed cost.)

2 **VARIABLE COSTS** are costs which increase for every extra mile that Joyce travels. Which of the costs are variable costs?

Copy out the grid and record your answers to questions 3 to 9 in it.

Yearly mileage	Total fixed cost	Total variable cost	Total cost	Average cost
10 000				
20 000				
30 000				
40 000				

3 Calculate Joyce's total fixed costs at an annual mileage of 30 000 miles.

4 Calculate Joyce's total fixed costs if she travels (a) 10 000 miles, (b) 20 000 miles, (c) 40 000 miles a year.

5 What are Joyce's variable costs if she travels 30 000 miles?

6 Calculate Joyce's variable costs if she travels (a) 10 000 miles, (b) 20 000 miles and (c) 40 000 miles (assume that costs per mile remain constant).

7 Calculate Joyce's total costs (i.e. total fixed costs plus total variable costs) if she travels 30 000 miles per year.

8 Calculate Joyce's total cost if she travels (a) 10 000 miles, (b) 20 000 miles, (c) 40 000 miles.

9 How much on average did it cost Joyce per mile to run her taxi travelling 30 000 miles over the year? (This is known as the 'average cost'.)

10 How much per mile on average would it have cost Joyce if she had travelled (a) 10 000 miles, (b) 20 000 miles and (c) 40 000 miles over a year?

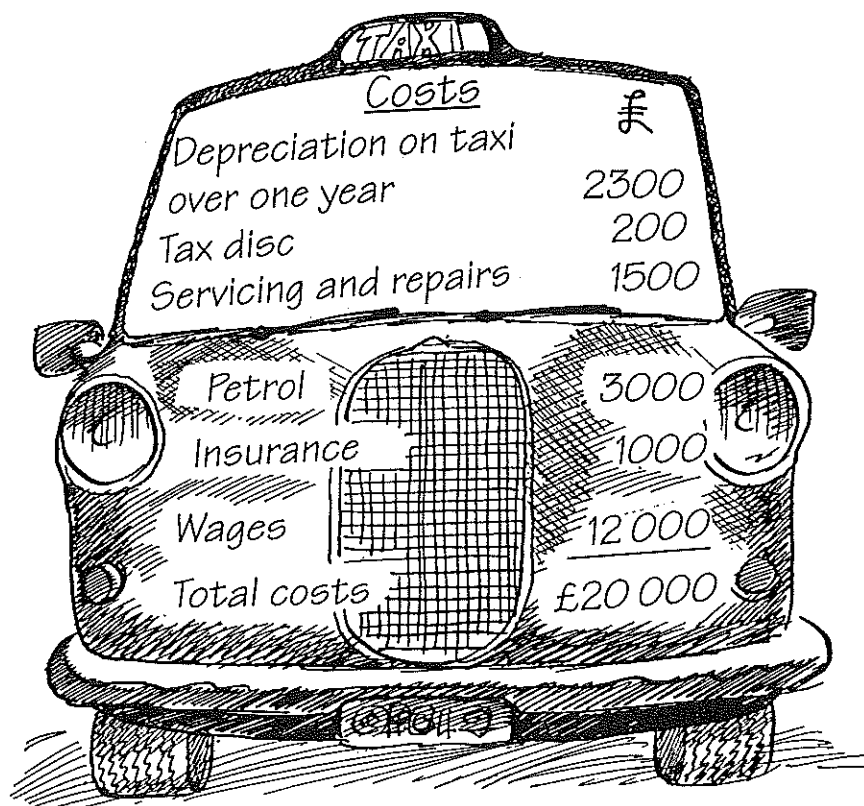
11 What would be the marginal cost for Joyce travelling an extra mile?

12 The *break even* point is where costs are just equal to the revenue that is earned. So, if Joyce's costs were £10 000 and she received £10 000 in fares, then that would be a break even point for her.

If she carried 5000 passengers in a year and travelled 30 000 miles, how much would she have to charge on average per passenger to break even?

13 If Joyce travels 20 000 miles a year, carrying 3000 passengers at an average fare of £4, is she going to make a profit or a loss?

14 Last year, Joyce travelled 30 000 miles and carried 4000 passengers at an average fare of £4. Is she making a profit or a loss? What should she do to improve the situation do you think?



Joyce Bigford is a taxi driver. She works 40 hours a week, 48 weeks a year irrespective of the number of passengers she carries. For this, she pays herself a wage of £12 000 a year. The costs shown above are based on costs over a year in which Joyce travelled 30 000 miles.

### Fixed and Variable Cost

'Jaguar cars are planning to spend more than £1bn throughout the 1990s on product development. They want to bring out 3 new ranges of cars as well as a new engine. At the same time, they must cut the cost of producing a car so they are to be profitable.'

It costs money to make cars. Part of the cost is a **FIXED COST**. This is a cost that stays the same however many cars are produced. Examples of fixed costs include:

- the £1bn to be spent on product development – that cost will remain the same whether Jaguar sells 2 or 100 000 of the new model cars a year;
- interest payments on any loans Jaguar has;
- advertising – again this does not change directly with output.

Fixed costs are often called **OVERHEAD COSTS**. They are the overheads of the business, money which has to be paid whatever the sales.